

**Abstract**

An uplink power control system and method of the present invention includes a current sensing technique for predicting the P1db power compression point. A dc current sensor detects the level of dc current transmitted from a control unit to an antenna unit of the system. The current measurements are analyzed to generate a theoretical prediction of amplifier linearity as the power levels are increased. The change in dc current indicates an inflection point where the amplifier no longer behaves linearly to an increase in RF power. Using this inflection point, an accurate assessment of the P1db compression point of the system can be determined and the signal power levels adjusted accordingly.

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